

Full Papers

毛细管电泳—电化学检测山楂中的活性成分

唐祝兴^{1,2}, 曾祎琨¹, 周韵¹, 臧树良³, 何品刚¹, 方禹之^{1,*}

¹华东师范大学化学系, 上海, 200062, 中国

²沈阳理工大学化学系, 沈阳, 110168, 中国

³辽宁大学化学系, 沈阳, 110036, 中国

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摘要 首次采用毛细管电泳—电化学检测法(CE-ED)同时测定山楂中的6种活性成分: 表儿茶素, 山奈酚, 氯原酸, 4-羟基苯甲酸, 槲皮素和原儿茶酸的含量。考察了缓冲液酸度和浓度、检测电位、分离电压和进样时间等实验参数对分离检测的影响。在最佳实验条件下, 工作电极为直径300 μ m的碳圆盘电极, 检测电位为+0.95V(vs. SCE), 缓冲液为60mmol/L 硼砂—硼酸溶液(pH=8.7),

分离电压16kV, 上述六组分在21 min 内即可实现分离。六种组分在三个数量级的范围内呈良好线性关系, 检测下限(S/N=3) 范围为3.0 $\times 10^{-8}$ g mL⁻¹ 至2.0 $\times 10^{-7}$ g mL⁻¹。该方法已成功地应用于实际样品分析, 结果令人满意。

关键词 [毛细管电泳](#) [电化学检测](#) [山楂](#)

分类号

Determination of Active Ingredients of Hawthorn by Capillary Electrophoresis with Electrochemical Detection

TANG Zhu-Xing^{1,2}, ZENG Yi-Kun¹, ZHOU Yun¹, ZANG, Shu-Liang³, HE Pin-Gang¹, FANG Yu-Zhi^{*,1}

¹ Department of Chemistry, East China Normal University, Shanghai 200062, China

² Department of Chemistry, Shenyang Institute of Technology, Shenyang, Liaoning 110168, China

³ Department of Chemistry, Liaoning University, Shenyang, Liaoning 110036, China

Abstract A method based on capillary electrophoresis with electrochemical detection has been developed for the separation and determination of epicatechin, kaempferol, chlorogenic acid, 4-hydroxybenzoic acid, quercetin and protocatechuic acid in hawthorn for the first time. The effects of working electrode potential, pH and concentration of running buffer, separation voltage and injection time on CE-ED were investigated. Under the optimum conditions, the analytes could be separated in a 60 mmol·L⁻¹ borate buffer (pH 8.7) within 21 min. A 300 μ m diameter carbon disk electrode has a good response at +0.95 V (vs. SCE) for all analytes. The response was linear over three orders of magnitude with detection limits (S/N=3) ranging from 3 $\times 10^{-8}$ to 2 $\times 10^{-7}$ g·mL⁻¹ for the analytes. The method has been successfully applied to the analysis of real sample, with satisfactory results.

Key words [Keywords capillary electrophoresis](#) [electrochemical detection](#) [hawthorn](#)

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通讯作者 方禹之 yuzhi@online.sh.cn

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